

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph at page 1, line 18 through page 2, line 4 as follows:

Protective tape used for optical member has plastic film bases, such as polyethylene terephthalate and polyethylene, and have pressure-sensitive adhesive layers applied to the base. The protective tape used for optical member is attached on materials to be protected via a pressure-sensitive adhesive layer, and protects the materials to be protected from blemish, contamination, etc. ~~F~~For example, as optical ~~materials~~materials to be protected, optical films, such as ~~p-larizing~~polarizing plates and ~~r-tardation~~retardation plates, may be ~~mention~~mentioned (~~Japanes~~Japanese Patent Publication No. ~~H-i~~Hei 4-30120; Japanese Patent Publication No. Hei 9-113726; Japanese Patent Publication No. Hei 11-256115; and Japanese Patent Publication No. Hei 11-256116).

Please amend the paragraph at page 2, line 24 through page 3, line 6 as follows:

As a ~~m-thod~~method of ~~relea-ing~~releasing a ~~prot-ctiv~~protective tape, a method may be often ~~ad-pt~~adopted in which a commercially ~~availabl~~available ~~cell-phan~~cellophane ~~pressur~~pressure-sensitive ~~adh-sive~~adhesive tape is ~~attach~~attached on a ~~corn-r~~corner of a protective tape, then the tape is vertically pulled up, and thereby the surface protective tape is released together with the tape. This is because that this method has a large effect of preventing damage or releasing in a corner of an optical film in comparison with a method of directly releasing protective tape by hand.

Please amend the paragraph at page 3, line 9 through page 4, line 7 as follows:

In the optical film with the above-mentioned protective tape, when they are piled up after cutting processing, there is a possibility that pressure-sensitive adhesives over flown from a cut surface may adhere to the surrounding protective tapes. Therefore, a treated layer (antifouling layer) comprising releasing agent etc. is formed on a backside of the protective tape base so that blocking of the optical film with the protective tape may not given. However, a treated layer formed on the backside makes difficult direct printing onto the treated layer by ink for discrimination of intended uses. In conventional methods, by such reason, a portion to be printed in the treated layer was once wiped off with solvents, such as ethanol, hexane or ethyl

Appl. No. : 10/763,977
Filed : January 23, 2004

acetate, to make the portion clean, and then printing was given to an exposure plastics surface. On the other hand, if the treated layer is designed so that a direct printing to the treated layer may be ~~enabled, inevitably, the~~ enabled, inevitably, the treated layer ~~concerned~~ concerned will ~~have~~ have good adhesive property with ~~pressure-sensitive~~ pressure-sensitive adhesives ~~→ over~~ → over flow ~~from~~ from a cut surface, as a ~~result~~ result, leading to ~~occurrence~~ occurrence of ~~blocking~~ blocking. Moreover, pressure-sensitive adhesives attached to the protective tape is wiped off with solvents, such as ethanol, hexane or ethyl acetate, at the time of visual inspection. There were such defects that poor solvent resistance of the treated layer caused whitening of the treated layer, and removed the treated layer, leading to resulting deterioration of optical characteristics.

Please amend the paragraph at page 4, line 22 through page 5, line 1 as follows:

As a result of wholehearted research in order to attain the above-mentioned purpose performed by the present inventors, it was found out that the ~~above-mentioned~~ above-mentioned subject might be attained by an ~~protective tape~~ protective tape used for optical member ~~shown~~ shown below, ~~leading~~ leading to completion of ~~the~~ the invention.

Please amend the paragraph at page 5, line 20 through page 6, line 3 as follows:

And the present invention is concerned to a treated layer forming agent used for protective tape used for optical member: comprising
a copolymer (A) including (a) an alkyl (meth)acrylate an alkyl group with carbon ~~number~~ numbers of 8 to 20;
(b) ~~(meth)acrylonitril~~ (meth)acrylonitrile; and
(c) a ~~monomer~~ monomer having ~~functional~~ functional groups ~~e-polym-rizable~~ copolymerizable with the component (a) and the component (b), as copolymerization components, and a cross-linking agent.

Please amend the paragraph at page 6, line 11 through page 7, line 5 as follows:

In a treated layer of the above-mentioned protective tape used for optical member, a long chain alkyl based release agent comprising a copolymer (A) that includes the above-mentioned components (a), (b), and (c) as copolymerization components is cross-linked with a cross-linking

Appl. No. : 10/763,977
Filed : January 23, 2004

agent. (Meth)acrylonitrile, as a component (b) in the copolymer (A), improves a film strength and adhesion of the treated layer. Moreover, a monomer, as a component (c) in the copolymer (A), including functional groups can improve ink fixability of the treated layer, and also enables printing without repelling of an ink in a printing process with stamping inks and ink jet onto the treated layer. Particularly, as a component (c), a monomer having carboxyl group is preferable. Therefore, in the treated layer on a base backside, even without wiping and cleaning with solvents, direct printing with inks ~~ont-onto~~ on the treated ~~lay-r~~ layer ~~surfae~~ surface is enabled. Besides, functional groups of the ~~comp-nent~~ component (c) are ~~er-s~~ cross-linked in the ~~e-p~~ copolymer (A) ~~+~~ to give a cross-linked structure to the treated layer, and then the crossed-linked structure can demonstrate solvent resistance in adhesive wiping during visual inspection, leading to suppression of omission and whitening by dissolution of the treated layer.

Please amend the paragraph at page 7, line 22 through page 8, line 4 as follows:

Besides, the above-mentioned treated layer has a certain level of adhesive property with cellophane pressure-sensitive ~~adh-sive~~ adhesive tape. ~~Th-refer~~ Therefore, in a protective tape ~~us-d~~ used for optical ~~membr-member~~ members of the ~~inv-nition~~ invention, in following ~~pr-duction~~ production ~~pr-e~~ processes, cellophane ~~pressur-sensitiv~~ pressure sensitive ~~adh-siv~~ adhesive tape ~~us-d may b-used~~ may be easily released, and thus good performance is shown also in picking up property with cellophane pressure-sensitive adhesive tape from materials to be protected.

Please amend the paragraph at page 8, line 18 through page 9, line 7 as follows:

As plastic film base 2, bases conventionally used for protective tape used for optical members may be used without special limitation. As film materials, in general, in the light of easiness in inspection of optical films by fluoroscopy and management, for example, there may be mentioned transparent films, such as polyester based resins, cellulose based resins, acetate based ~~r-sins~~ resins, polyether ~~sulfen~~ sulfone based resins, ~~p-lycarb-nat~~ polycarbonate based ~~r-sins~~ resins, polyamide based resins, ~~p-lyimid~~ polyimide based ~~r-sins~~ resins, ~~p-lyolefin~~ polyolefin based resins, and acrylic based ~~r-sins~~ resins. Among them, polyester based resins are preferable. The film base may be used as laminated materials of one kind or two or more kinds of film materials, and moreover stretched materials of the above-mentioned films may also be

Appl. No. : 10/763,977
Filed : January 23, 2004

used. In general, a thickness of the plastic film base 2 is 500 μm or less, and preferably in a range of 10 through 200 μm .

Please amend the paragraph at page 9, line 17 through page 10, line 1 as follows:

Various alkyl (meth)acrylates may be used as monomers used for the acrylic based polymers. For example, there may be mentioned: alkyl (meth)acrylates (for example, alkyl esters with carbon numbers of 1 through 20, such as methyl ester, ethyl ester, propyl ester, butyl ester, 2-ethyl hexyl ester, isooctyl ester, isononyl ester, isodecyl ester, dodecyl ester, lauryl ester, tridecyl ester, pentadecyl ester, hexadecyl ester, heptadecyl ester, ~~octadecyl ester, nonadecyl ester, and eicosyl ester~~), and they may be used ~~independently~~ independently or two or ~~more~~ more of them may be used in ~~combination~~ combination.

Please amend the paragraph at page 10, lines 18-24 as follows:

Cross-linking agent may be comprised in the above-mentioned pressure-sensitive adhesives. As cross-linking agents, polyisocyanate compounds, polyamine compounds, melamine resins, urea resins, epoxy resins, etc. may be mentioned. Furthermore, tackifiers, plasticizers, fillers, antioxidants, UV absorbents, silane coupling agents, etc. may also be used suitably, if needed, ~~to the above-mentioned~~ to the above-mentioned pressure-sensitive pressure-sensitive adhesives.

Please amend the paragraph at page 10, line 25 through page 11, line 11 as follows:

~~Formation method of the pressure-sensitive adhesive~~ Formation method of the pressure-sensitive adhesive layer 3 is ~~not~~ not especially ~~limited~~ limited, and ~~there may be mentioned methods~~ there may be mentioned methods, such as: (a transfer method) in which a pressure-sensitive adhesive is applied onto a release liner, and a pressure-sensitive adhesive layer formed is transferred to the film base 2 after the pressure-sensitive adhesive layer is dried; and (a direct method) in which a pressure-sensitive adhesive is directly applied onto the film base 2, and then dried. A thickness (a film thickness in a dried state) of the pressure-sensitive adhesive layer 3 is determined according to a pressure-sensitive adhesive strength needed. The thickness is usually approximately 1 through 100 μm , and preferably 5 through 50 μm .

Appl. No. : 10/763,977
Filed : January 23, 2004

Please amend the paragraph at page 11, line 20 through page 12, line 3 as follows:

Alkyl (meth)acrylate (a) having an alkyl group with carbon numbers of 8 to 20 is a monomer conventionally used for long chain alkyl based release agent (copolymer). Carbon numbers of the alkyl group of 7 or less provides inconvenience to releasability. ~~Carbon~~ Carbon numbers of 21 ~~for more~~ ~~mak-smakes~~ film strength strength weak. As long chain alkyl groups having carbon numbers ~~for~~ 8 to 20, an ~~etyl gr up~~ octyl group, a nonyl group, a decyl ~~gr up~~ group, an undecyl ~~gr up~~, a ~~d-decyl gr up~~ dodecyl group, a hexadecyl group, an octadecyl group, an eicosyl group, etc. may be mentioned.

Please amend the paragraph at page 12, line 20 through page 13, line 5 as follows:

A percentage (a molar ratio of monomer units in the formed polymer) to be used of the component (c) may be adjusted to a sum total of the component (a) and the component (b). Preferably, sum total of (component (a) + component (b)) / component (c) = 100 / 20 to 100 / 60, and more preferably 100 / 30 ~~to~~ 100 / 50. On one hand, a small amount ~~of monomers~~ of monomers as the ~~components~~ components (c) having functional ~~gr ups t nds t groups~~ groups tends to worsen printing ~~pr perty~~ property, and to ~~provid~~ provide inadequate cross-linking by a cross-linking agent, leading to tendency of degradation of solvent resistance. On the other hand, a large amount thereof tends to reduce wiping property of the resulting pressure-sensitive adhesive.

Please amend the paragraph at page 13, line 18 through page 14, line 5 as follows:

As cross-linking agents, according to the functional group as the component (c) cross-linking agents that have at least two functional groups having reactivity with the functional group may be used. In the case where the component (c) is a monomer including carboxyl groups, as cross-linking agents, polyisocyanate compounds, polyamine compounds, melamine resins, urea resins, epoxy ~~r sin~~, ~~te. may b~~ resin, etc. ~~may be~~ mentioned. In ~~th~~ the light of adhesive property ~~t~~ to a base material of ~~th~~ the treated layer, ~~p-lyisocyanat comp unds~~ polyisocyanate compounds may be suitably ~~us d~~ used as cross-linking ~~ag nts~~ agents. Although an amount of the cross-linking agent to be used is not especially limited, it is usually approximately 1 to 50 parts by weight to the copolymer (A) 100 parts by weight, and preferably 10 to 20 parts by weight.

Appl. No. : 10/763,977
Filed : January 23, 2004

Please amend the paragraph at page 14, lines 22-25 as follows:

Although still more detailed description will be given to below for a protective tape used for optical member of the ~~invention~~invention with ~~reference~~reference to Examples, the ~~invention~~invention is not ~~limit-d~~limited to them.

Please amend the paragraph at page 15, line 24 through page 16, line 9 as follows:

The ~~above-mentioned treat agent~~above-mentioned treat agent was applied on one ~~side of a~~polyethylene side of a polyethylene terephthalate film with a thickness of 38 μm to give an ~~applied amount after dried~~applied amount after dried of 0.04 g/m^2 , using a ~~Mayr~~Mayer bar, and dried for 1 minute at 120 °C to form a treated layer. Subsequently, the above-mentioned acrylic based pressure-sensitive adhesive composition was applied onto an opposite side of the treated layer on the above-mentioned polyethylene terephthalate film to give a thickness after dried of 15 μm using an applicator, and then dried for 2 minutes at 120 °C to form a pressure-sensitive adhesive layer, and thus an protective tape used for optical member was obtained.

Please amend the paragraph at page 16, lines 17-24 as follows:

Except for having used a copolymer (a molar ratio: octadecyl methacrylate / acrylonitrile = 20 / 80, a weight average molecular weight 70,000) of octadecyl methacrylate and acrylonitrile instead of the copolymer (A), and not having used the cross-linking agent in preparation of a treated layer forming agent of Example 1, a same method as in Example 1 was repeated to prepare a treated layer forming agent. And a protective tape used for optical member was obtained as in ~~Exempl~~Example 1.

Please amend the paragraph at page 16, line 25 as follows:

~~Comparative~~Comparative example 3

Please amend the paragraph at page 17, lines 1-4 as follows:

Appl. No. : 10/763,977
Filed : January 23, 2004

In ~~Example~~ Example 1 (preparation of a ~~protective~~ protective tape ~~used~~ for optical member), except for not having performed formation of a treated layer, same method as in Example 1 was repeated, and a protective tape used for optical member was obtained.

Please amend the paragraph at page 17, line 22 through page 18, line 3 as follows:

1) Trimethylolpropane tolylene diisocyanate 1.5 parts by weight was added to a 30% ethyl acetate solution of an acrylic based polymer of butyl acrylate / acrylic acid (weight ~~ratio~~ ratio: 100 / 3, ~~weight av rag~~ weight-average molecular weight 300,000) to the ~~ab ve menti ned~~ above-mentioned acrylic based ~~p-lym-r~~ polymer 100 parts by ~~w ight exp r ss d in t r ms~~ weight expressed in terms of solid, and mixed to prepare an acrylic based pressure-sensitive adhesive composition.

Please amend the paragraph at page 18, line 16 through page 19, line 1 as follows:

5) The sample was kept to stand for 30 minutes after attached, and ~~subsequ ntly, the prot etive tap used fr optical memb r~~ subsequently, the protective tape used for optical member was ~~180-degr~~ 180-degree peeled at a ~~rat rate~~ rate of 0.3m/~~minut~~ minute to ~~btain~~ obtain an ~~adh siv~~ adhesive power of the ~~tr ated~~ treated layer.

Please amend the paragraph at page 19, line 24 as follows:

x --- ~~Treat d~~ Treated layer is ~~mark dly r moved~~ markedly removed.

Please amend the paragraph at page 19, line 25 through page 20, line 1 as follows:

(5) Pick up ~~pr p rty of pr tectiv~~ property of protective tape used for optical member by ~~cellophan~~ cellophane ~~pressur s nsitive~~ pressure-senstive adhesive tape